

Centrament Proof CL 1

Liquid crystalline waterproofing admixture with plasticising effect



PRODUCT PROPERTIES

- Liquid crystalline waterproofing admixture
- Interrupts capillaries and fills pores
- Highly effective against pressurised water
- Heals cracks up to 0.4 mm
- Improved protection against frost
- Reduces the rate of carbonation and sulphation
- Prolongs the life of concrete

AREAS OF APPLICATION

- Concrete with increased water impermeability requirements
- Concrete for underground structures
- Pipes, shafts, ducts, manholes and other sewerage components
- Concrete exposed to hydrostatic pressure
- Tanks, pools, basins and concrete containers
- Concrete for structures designed for long service life

APPLICATION ADVICE

Centrament Proof CL 1 is a liquid admixture that, when added to concrete, initiates crystal forming chemical reactions. The resulting crystals seal pores, capillaries and cracks, making the concrete less permeable to water and corrosive substances. This is highly desirable for concrete used in areas subject to prolonged hydrostatic water pressure.

As the concrete sets, some of the water in the mix evaporates by diffusion. This process creates an interconnected network of pores and capillaries that adversely affects the permeability and durability of the concrete. Centrament Proof CL 1 contains special components that form complexes of permanent, insoluble crystals in the hydrated Portland cement environment. These crystals grow and spread in the pores and capillaries of the concrete, effectively sealing them and making it extremely difficult for water to penetrate, even under high hydrostatic pressure. The crystalline structures formed by Centrament Proof CL 1 can even bridge and accelerate the healing of hairline cracks in the cement matrix (up to 400 microns).

Frost, soluble chlorides and sulphites, carbonation and even biological degradation by vegetation and micro-organisms all require the presence of liquid water. By restricting its ability to penetrate the concrete, the risk of all this damage can be significantly reduced.

For the best possible waterproofing results, use Centrament Proof CL 1 in combination with a good water-reducing admixture, e.g. MC-PowerFlow superplasticiser. The crystallisation reactions utilise by-products of Portland cement hydration. Therefore, a higher clinker content will result in more crystallisation and therefore better waterproofing.

For an additional hydrophobic effect, a combination with a hydrophobic admixture such as Centrament Proof HL 20 is possible.

It is recommended to add Centrament Proof CL 1 at the end of the mixing process, either after or with the last part of the mixing water. This will ensure that the crystalline precursors are evenly distributed throughout the concrete mix. After all admixtures have been added, mix for a further 60 seconds. Refer to "General application advice: Application of concrete admixtures".

Compared to a reference concrete, the concrete containing Centrament Proof CL 1 should show improved workability, similar or higher final compressive strength and noticeably reduced (>50%) water penetration depth in accordance with EN 12390-8. Under certain circumstances a slight early strength retardation may be observed. The concrete surface may be more prone to efflorescence - this is a normal side effect of the crystallisation reaction.

TECHNICAL VALUES & PRODUCT CHARACTERISTICS

Characteristic	Unit	Value	Comments
Density	kg/dm ³	approx. 1.1	± 0.02 kg/dm ³
Recommended dosage range	g	15 - 25	per kg cement
Chloride content (maximum)	%	0.1	mass fraction
Alkaline content (maximum)	%	10.0	mass fraction
Water/cement ratio	w/c	≤ 0.5	recommended
Cement content	kg	≥ 350	recommended per 1 m ³ concrete

All technical values are laboratory results determined at 21°C ±2°C and 50% relative humidity.

Type of admixture	Plasticizing admixture for concrete (EN 934-2: T2)
Designation of admixture	Centrament Proof CL 1
Colour	yellowish
Form	liquid
Notified body	Karlsruher Institut für Technologie (KIT) Materialprüfungs- & Forschungsanstalt, MPA Karlsruhe, Notified Body number: 0754
In-company production control	EN ISO 9001
Storage	Can be stored in cool and dry conditions for at least 12 months in original unopened packs.
Delivery form	30 kg jerrycan / 200 kg drum / 1000 kg IBC

Safety instructions

Please note the safety information and advice given on the packaging labels and safety data sheets.

Note: The information contained in this data sheet is based on our experience and is correct to the best of our knowledge. It is, however, not binding. It will need to be adapted to the requirements of the individual structure, to the specific application and to non-standard local conditions. Application-specific conditions must be checked in advance by the planning engineer/specifier and, where different from the standard conditions indicated, will require individual approval. Technical advice provided by MC's specialist consultants does not replace the need for a planning review by the client or its agents in respect of the history of the building or structure. Subject to this prerequisite, we are liable for the correctness of this information within the framework of our terms and conditions of sale and delivery. Recommendations of our employees deviating from the information given in our data sheets are only binding for us if they are confirmed in writing. In all cases, the generally accepted rules and practices reflecting the current state of the art must be observed. The information given in this technical data sheet is valid for the product supplied by the country company listed in the footer. It should be noted that data in other countries may differ. The product data sheets valid for the relevant foreign country must be observed. The latest technical data sheet shall apply to the exclusion of previous, duly superseded versions; the date of issue in the footer must be observed. The latest version is available from us on request or may be downloaded from our website. [2300019978]